

## ABSTRACT

The invention provides methods of screening for compounds that affect melanogenesis and the function of P protein in organisms, cells, or cell-free systems. The invention further relates to pharmacologic and cosmetic uses of methods of inhibiting melanogenesis, methods  
5 of activating melanogenesis, and compounds and pharmacologic compositions useful for the inhibition or activation of melanogenesis and, therefore, for lightening or darkening the pigmentation of cells and tissue, *i.e.*, skin.